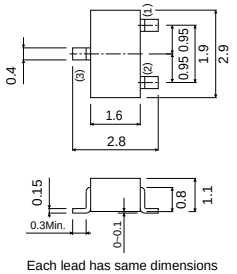
General purpose amplification(–12V, –2A)

2SB1690K

●Applications
Low frequency amplifier
Deiver

●Features
1) A collector current is large.
2) Collector saturation voltage is low.
$V_{CE(sat)} \leq -180mV$
at $I_C = -1A / I_B = -50mA$

●External dimensions (Units : mm)



Each lead has same dimensions

ROHM : SMT3
EIAJ : SC-59
JEDEC : SOT-346

(1) Emitter
(2) Base
(3) Collector

abbreviated symbol : FV

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	–15	V
Collector-emitter voltage	V_{CEO}	–12	V
Emitter-base voltage	V_{EBO}	–6	V
Collector current	I_C	–2	A
		–4	A*
Collector power dissipation	P_C	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

* Single pulse Pw=1ms

●Packaging specifications

Type	Package	Taping
	Code	T146
	Basic ordering unit (pieces)	3000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	–15	–	–	V	$I_C = -10\mu A$
Collector-emitter breakdown viltage	BV_{CEO}	–12	–	–	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–	V	$I_E = -10\mu A$
Collector cutoff current	I_{CBO}	–	–	–100	nA	$V_{CB} = -15V$
Emitter cutoff current	I_{EBO}	–	–	–100	nA	$V_{EB} = -6V$
Collerctor-emitter saturation voltage	$V_{CE(sat)}$	–	–120	–180	mV	$I_C = -1A, I_B = -50mA$
DC current transfer ratio	h_{FE}	270	–	680	–	$V_{CE} = -2V, I_C = -200mA$*
Transition frequency	f_T	–	360	–	MHz	$V_{CE} = -2V, I_E = -200mA$, f=100MHz*
Output capacitance	Cob	–	15	–	pF	$V_{CB} = -10V, I_E = 0mA$, f=1MHz

* Pulsed

●Electrical characteristic curves

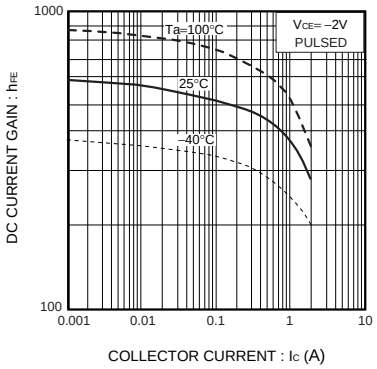


Fig.1 DC current gain vs. collector current

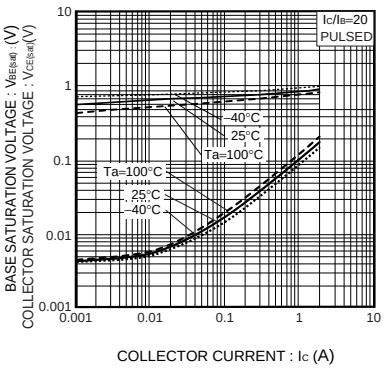


Fig.2 Collector-emitter saturation voltage base-emitter saturation voltage vs.collector current

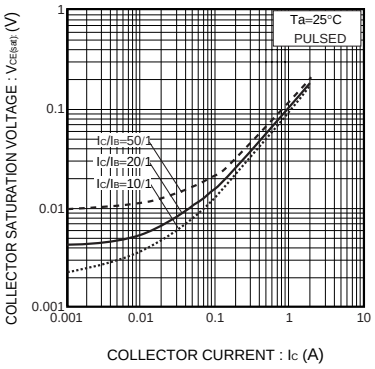


Fig.3 Collector-emitter saturation voltage vs. collector current

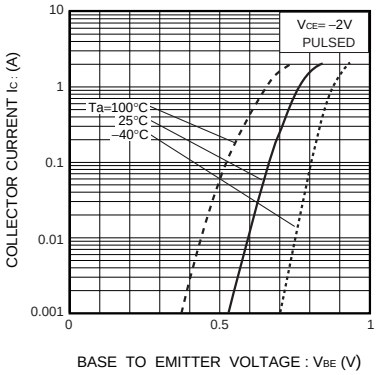


Fig.4 Grounded emitter propagation characteristics

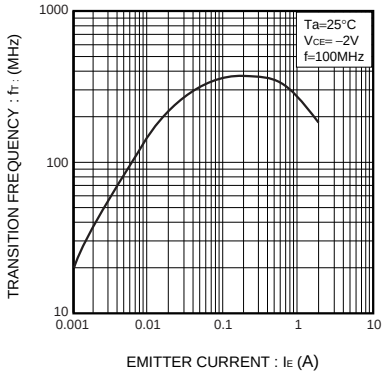


Fig.5 Gain bandwidth product vs. emitter current

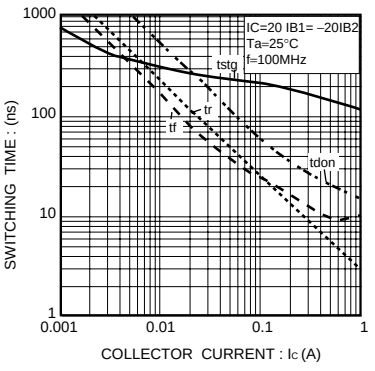


Fig.6 Switching time

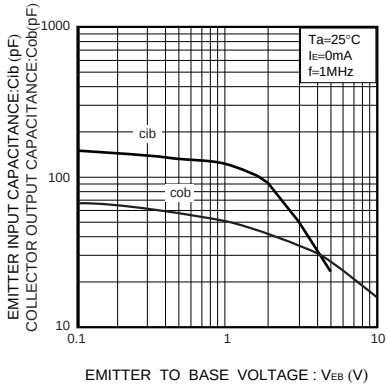


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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